

8 APR 1948

NACA

RESEARCH MEMORANDUM

EVALUATION OF GUST AND DRAFT VELOCITIES FROM FLIGHTS OF
P-61C AIRPLANES WITHIN THUNDERSTORMS SEPTEMBER 10, 1947
TO SEPTEMBER 15, 1947 AT CLINTON COUNTY
ARMY AIR FIELD, OHIO

By

Jack Funk

Langley Memorial Aeronautical Laboratory
Langley Field, Va.



**NATIONAL ADVISORY COMMITTEE
FOR AERONAUTICS**

WASHINGTON

APR 8 1948

NACA LIBRARY
LANGLEY MEMORIAL AERONAUTICAL
LABORATORY
Langley Field, Va.

NATIONAL ADVISORY COMMITTEE FOR AERONAUTICS

RESEARCH MEMORANDUM

EVALUATION OF GUST AND DRAFT VELOCITIES FROM FLIGHTS OF
P-61C AIRPLANES WITHIN THUNDERSTORMS SEPTEMBER 10, 1947
TO SEPTEMBER 15, 1947 AT CLINTON COUNTY

ARMY AIR FIELD, OHIO

By Jack Funk

The results obtained from measurements of gust and draft velocities within thunderstorms at Clinton County Army Air Field, Ohio, for the period of September 10, 1947 to September 15, 1947 are presented herein. These data are summarized in tables I and II, respectively, and are of the type presented in reference 1 for previous flights.

Langley Memorial Aeronautical Laboratory
National Advisory Committee for Aeronautics
Langley Field, Va.

Jack Funk
Jack Funk
Aeronautical Engineer

Approved:

John R. Neffall
for Richard V. Rhode
Chief of Aircraft Loads Division

bkb

REFERENCE

1. Funk, Jack: Evaluation of Gust and Draft Velocities from Flights of P-61C Airplanes within Thunderstorms August 13, 1947 to August 15, 1947 at Clinton County Army Air Field, Ohio. NACA RM No. 18A27, 1948.

TABLE I.- SUMMARY OF GUST MEASUREMENTS FROM FLIGHTS
OF P-61C AIRPLANES WITHIN THUNDERSTORMS

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts	
September 10, 1947 - Flight 36						
Airplane 348 - Traverse 1 Length of traverse 440.0 sec						
0 - 120	24,500	----	-----	----	0	
a 120 - 130		4.1	-5.9	----	3	
130 - 140		7.2	-9.3	----	8	
140 - 150		6.6	-8.0	----	9	
150 - 160		11.2	-9.1	----	10	
160 - 170	24,000	----	-7.1	----	3	
170 - 180		9.0	-4.2	----	2	
180 - 190	24,500	10.1	-5.5	----	3	
190 - 200		3.8	-----	----	2	
200 - 210		----	-----	----	0	
210 - 220		8.4	-----	----	3	
220 - 230		4.1	-4.2	----	2	
230 - 240		6.4	-4.7	4.9	275	5
240 - 250		----	-2.3	----	1	
250 - 260		9.3	-5.9	-12.6	138	3
260 - 280	24,000	----	-----	----	0	
280 - 290		5.9	-5.1	----	3	
290 - 300		----	-6.6	----	1	
300 - 310		----	-4.1	-9.4	88	1
310 - 320		----	-----	----	0	
320 - 330	24,500	6.7	-3.5	-6.9	147	3
330 - 340		7.2	-5.2	----	4	
340 - 350		3.2	-4.2	----	2	
b 350 - 360		----	-----	----	0	
360 - 370	24,000	----	-----	----	0	
370 - 440	24,500	----	-----	----	0	
Airplane 348 - Traverse 2 Length of traverse 1715.9 sec						
a 0 - 150	24,500	----	-----	----	0	
150 - 160		12.8	-6.1	----	6	

^aCloud entry.

^bCloud exit.

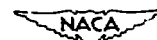


TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)		Maximum true gust velocity $U_{t_{max}}$ (fps)		Gust gradient distance (ft)		No. of gusts
September 10, 1947 - Flight 36								
Airplane 348 - Traverse 2 Length of traverse 1715.9 sec								
160 - 170	24,500	14.1	-6.6	----	-----	---	---	5
170 - 180	25,000	6.2	-10.5	8.4	-4.7	204	95	5
180 - 190	25,500	10.8	-10.2	----	-----	---	---	9
190 - 200		11.0	-14.6	----	-----	---	---	8
200 - 210		9.9	-4.5	----	-----	---	---	6
210 - 220	26,000	10.3	-4.6	----	-----	---	---	8
220 - 230		7.3	-13.9	----	-----	---	---	7
230 - 240		11.9	-27.1	----	-28.9	---	229	5
240 - 250		5.0	-11.1	----	-----	---	---	3
250 - 260		7.6	-----	----	-----	---	---	1
^b 260 - 300		----	-----	----	-----	---	---	0
300 - 310	25,500	----	-----	----	-----	---	---	0
^{a-b} 310 - 710		----	-----	----	-----	---	---	0
710 - 720	24,500	----	-----	----	-----	---	---	0
720 - 790		----	-----	----	-----	---	---	0
^a 790 - 800		----	-4.2	----	-6.7	---	241	1
800 - 810		----	-----	----	-----	---	---	0
810 - 820		3.2	-5.7	----	-12.2	---	141	3
820 - 830		5.7	-----	----	-----	---	---	2
830 - 840	24,000	6.4	-8.7	----	-----	---	---	7
840 - 850		3.1	-7.1	----	-----	---	---	3
850 - 860		----	-3.4	----	-5.6	---	172	1
860 - 870		6.1	-----	4.3	-----	89	---	2
870 - 880		----	-7.6	----	-----	---	---	2
880 - 890		4.8	-4.1	9.3	-6.7	98	286	3
890 - 900		----	-2.4	----	-----	---	---	1
900 - 910		3.2	-----	----	-----	---	---	1
910 - 920		----	-6.8	----	-----	---	---	2
920 - 930	24,500	----	-7.1	----	-8.0	---	174	2
930 - 940	24,000	3.4	-4.4	----	-----	---	---	5
940 - 950	24,500	3.5	-----	----	-----	---	---	1
950 - 960		8.9	-5.0	8.0	-----	120	---	6
960 - 970		----	-9.0	----	-16.7	---	225	2
970 - 980		8.8	-5.6	----	-----	---	---	4

^aCloud entry.^bCloud exit.

NACA

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 10, 1947 - Flight 36					
Airplane 348 - Traverse 2 Length of traverse 1715.9 sec					
980 - 990	24,500	6.8	-4.4	----	6
990 - 1000		----	----	----	0
1000 - 1010		----	-4.5	----	1
1010 - 1020		2.6	-3.4	----	2
^b 1020 - 1030		----	----	----	0
1030 - 1410		----	----	----	0
^a 1410 - 1420		6.6	-8.1	----	4
1420 - 1430	24,000	12.5	-29.2	----	8
1430 - 1440		----	----	----	0
1440 - 1450	23,500	6.4	----	----	1
1450 - 1460	24,000	17.5	-10.7	----	8
1460 - 1470	24,500	8.0	-22.3	----	7
1470 - 1480	24,000	7.3	-10.6	----	11
1480 - 1490		14.1	-10.5	----	6
1490 - 1500	23,500	14.4	----	----	4
1500 - 1510	24,500	10.3	-17.8	----	7
1510 - 1520		6.9	-9.4	----	6
1520 - 1530		10.7	-6.9	----	12
1530 - 1540		10.8	----	----	4
1540 - 1570		----	----	----	0
^b 1570 - 1580		----	----	----	0
1580 - 1720		----	----	----	0
Airplane 348 - Traverse 3 Length of traverse 517.8 sec					
^a 0 - 130	24,500	----	----	----	0
130 - 140		----	----	----	0
140 - 180		----	----	----	0
180 - 190		----	-2.3	----	1
190 - 200		3.1	----	----	1
200 - 260		----	----	----	0
260 - 270		----	-4.2	----	1
270 - 280		----	----	----	0

^aCloud entry.^bCloud exit.

NACA

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 10, 1947 - Flight 36					
Airplane 348 - Traverse 3 Length of traverse 517.8 sec					
280 - 290	24,500	----	-7.0	----	1
290 - 300	24,000	----	----	----	0
300 - 310		6.6	-3.3	----	2
310 - 320	24,500	4.7	-6.2	8.9	4
320 - 350		----	----	----	0
350 - 360		----	-4.8	----	2
360 - 390	24,000	----	----	----	0
^b 390 - 400		----	----	----	0
400 - 520		----	----	----	0
Airplane 348 - Traverse 4 Length of traverse 576.9 sec					
0 - 280	24,500	----	----	----	0
280 - 380	24,000	----	----	----	0
^a 380 - 390		----	----	----	0
390 - 450		----	----	----	0
450 - 460		4.3	-19.6	-11.0	6
460 - 470	23,500	23.4	-28.2	----	7
470 - 480		27.8	-22.4	----	5
480 - 490	24,000	20.5	-21.7	----	9
490 - 500	24,500	10.7	-26.5	-27.3	7
500 - 510		5.1	-4.6	----	4
510 - 520		----	-7.6	----	2
520 - 530		----	-3.2	----	1
530 - 540		----	----	----	0
^b 540 - 550		12.2	----	----	1
550 - 560		----	----	----	0
560 - 580	24,000	----	----	----	0

^aCloud entry.^bCloud exit.

NACA

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 10, 1947 - Flight 36					
Airplane 356 - Traverse 1 Length of traverse 945.7 sec					
0 - 70	20,000	----	----	----	0
70 - 80		2.4	----	----	1
80 - 90		2.3	----	----	1
^a 90 - 100		5.1	-9.3	----	6
100 - 110		11.8	-34.9	----	7
110 - 120		12.3	-10.3	----	7
120 - 130		15.0	-19.8	----	7
130 - 140		11.9	-3.1	----	3
140 - 150	20,500	2.7	-7.0	----	2
150 - 160	20,000	6.4	-4.5	----	6
160 - 170		12.3	-9.2	----	5
170 - 180	20,500	15.7	----	----	3
180 - 190	20,000	----	-4.0	----	1
190 - 200		6.9	-3.6	----	3
200 - 210		3.7	-4.2	----	2
210 - 220		2.2	-3.7	----	2
^b 220 - 250		----	----	----	0
250 - 260		3.4	-6.4	----	4
260 - 270		4.7	-3.3	----	3
270 - 280		----	-.7	----	1
280 - 290		----	-3.7	----	1
290 - 300		3.2	-5.2	----	5
300 - 680		----	----	----	0
680 - 690		3.6	----	----	1
690 - 700		----	-5.8	----	1
^a 700 - 710		4.5	-2.9	----	2
710 - 720		8.9	-6.2	18.9	5
720 - 730		5.2	-3.8	----	9
730 - 740		6.8	-8.5	----	10
740 - 750		9.8	-10.7	----	9
750 - 760		6.4	-6.0	----	7
760 - 770		11.6	-7.7	----	6
770 - 780	20,500	12.6	-9.3	----	6

^aCloud entry.^bCloud exit.

NACA

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 10, 1947 - Flight 36					
Airplane 356 - Traverse 1 Length of traverse 945.7 sec					
780 - 790	20,500	8.6	-13.2	----	9
790 - 800		11.9	-11.6	----	12
800 - 810		13.0	-12.7	----	9
810 - 820	21,000	14.1	-13.2	----	9
820 - 830		9.4	-16.9	----	8
830 - 840	21,500	9.1	-13.1	----	7
840 - 850		5.1	-15.9	----	2
850 - 860		----	-2.8	----	1
860 - 900		----	----	----	0
^b 900 - 910		----	----	----	0
910 - 950		----	----	----	0
Airplane 356 - Traverse 2 Length of traverse 228.1 sec					
0 - 50	20,000	----	----	----	0
^a 50 - 60		----	----	----	0
60 - 70		----	----	----	0
70 - 80		----	-5.1	----	1
80 - 90	20,500	13.6	-15.0	----	7
90 - 100	20,000	14.7	-11.6	----	10
100 - 110		11.1	----	----	6
110 - 120	20,500	15.7	-10.4	----	9
120 - 130	21,000	15.8	-9.7	----	6
130 - 140		2.8	-13.6	----	7
140 - 150		4.8	-6.1	5.8	211
150 - 160		10.0	-3.2	-10.7	195
160 - 170	21,500	12.0	-7.2	----	5
170 - 180		3.7	-8.3	----	6
^b 180 - 190	22,000	7.4	-5.4	----	5
190 - 200		5.9	-4.4	----	2
200 - 210		----	-5.5	----	2
210 - 230		----	----	----	0

^aCloud entry.
^bCloud exit.

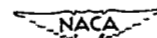


TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 10, 1947 - Flight 36					
Airplane 356 - Traverse 3 Length of traverse 213.9 sec					
^a 0 - 20	20,000	----	----	----	0
20 - 30		8.2	-8.4	----	3
30 - 40		11.1	-4.9	----	3
40 - 50		4.9	-5.3	----	8
50 - 60		12.8	-6.9	----	4
60 - 70		6.3	-5.2	----	6
70 - 80		9.1	-7.7	----	11
80 - 90	20,500	6.8	-7.7	----	5
90 - 100		2.2	----	----	1
100 - 110		----	----	----	0
110 - 120		2.2	-3.4	----	2
120 - 130		----	-3.5	----	2
130 - 140	20,000	11.0	-11.9	----	2
140 - 150		7.9	-9.0	----	10
150 - 160		8.8	-9.4	----	14
160 - 170		13.8	-9.3	----	11
170 - 180		11.2	-9.2	----	11
^b 180 - 190		9.5	-15.1	----	8
190 - 200		----	----	----	0
200 - 220	19,500	----	----	----	0
Airplane 354 - Traverse 1 Length of traverse 2989.8 sec					
^a 0 - 50	14,500	----	----	----	0
50 - 60		----	----	----	0
60 - 70		18.5	-5.1	----	6
70 - 80	15,000	18.5	-14.4	----	11
80 - 90		4.0	-6.5	----	2
90 - 110		----	----	----	0
110 - 120		4.8	----	----	1
120 - 130		----	----	----	0
130 - 140	14,500	----	-6.8	----	3

^aCloud entry.^bCloud exit.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 10, 1947 - Flight 36					
Airplane 354 - Traverse 1 Length of traverse 2989.8 sec					
140 - 150	14,500	----	-2.8	----	1
150 - 160	14,000	4.1	-5.3	----	4
160 - 170		2.9	----	----	3
170 - 180		----	-3.7	----	2
^b 180 - 190	13,500	1.4	-2.7	----	2
^b 190 - 200		----	----	----	0
200 - 290	14,000	----	----	----	0
290 - 300		----	-6.6	----	3
300 - 310		6.6	-5.0	----	5
310 - 320		4.4	-4.8	----	4
320 - 330	14,500	----	-8.3	----	2
330 - 340		4.7	-6.1	----	4
340 - 350		1.8	----	----	1
350 - 360		1.8	-3.6	----	2
360 - 370		5.5	-6.5	----	2
370 - 380		----	-3.6	----	2
380 - 390		5.6	-5.9	----	2
390 - 400		3.7	-10.4	----	4
400 - 410		6.4	-4.4	----	4
410 - 420		10.2	-11.7	----	5
420 - 430		1.9	----	----	1
430 - 440		8.1	-8.6	----	3
^a 440 - 690		----	----	----	0
^a 690 - 700		4.5	-6.0	----	5
700 - 710		7.7	-11.0	----	2
710 - 720	15,000	----	-3.8	----	1
720 - 730		8.4	----	----	1
730 - 740		2.9	----	----	1
740 - 750		6.6	-4.0	14.5	3
750 - 760		4.1	-2.2	-6.7	4
760 - 780		----	----	----	0
780 - 790		----	-6.6	----	2
790 - 840		----	----	----	0

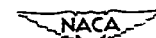
^aCloud entry.^bCloud exit.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 10, 1947 - Flight 36					
Airplane 354 - Traverse 1 Length of traverse 2989.8 sec					
^b 840 - 850	15,000	----	----	----	0
850 - 870		----	----	----	0
^a 870 - 880		----	----	----	0
880 - 890		----	----	----	0
890 - 900		----	-8.1	----	3
900 - 910		20.4	-5.8	----	9
910 - 920	15,500	7.5	-4.8	----	3
920 - 930		8.6	-11.1	----	7
930 - 940		5.9	-12.4	----	5
940 - 950	15,000	----	-11.9	----	2
950 - 960	14,500	11.0	-4.5	4.7	107
960 - 970		5.4	-6.5	----	8
970 - 980		----	-3.4	----	1
980 - 990	15,000	----	-8.6	----	483
990 - 1000		----	-10.8	-23.5	306
1000 - 1010	14,500	4.8	-3.6	----	4
1010 - 1020		5.9	-4.3	----	3
1020 - 1040		----	----	----	0
1040 - 1050		4.2	----	----	2
1050 - 1060		----	----	----	0
1060 - 1070		5.0	-5.5	----	4
1070 - 1080		----	----	----	0
^b 1080 - 1090		----	----	----	0
1090 - 1230		----	----	----	0
^a 1230 - 1240		----	----	----	0
1240 - 1270		----	----	----	0
1270 - 1320	14,000	----	----	----	0
1320 - 1330	13,500	----	-3.0	----	1
1330 - 1340		1.5	-4.1	----	4
1340 - 1350		2.1	-3.4	----	5
1350 - 1360		----	-1.4	-6.0	63
1360 - 1370	14,000	----	-7.7	----	3
1370 - 1380		5.6	-4.0	----	2

^aCloud entry.^bCloud exit.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 10, 1947 - Flight 36					
Airplane 354 - Traverse 1 Length of traverse 2989.8 sec					
1380 - 1390	14,000	5.0	-1.9	----	3
1390 - 1400	14,500	8.3	-7.0	----	9
1400 - 1410		----	-6.6	----	2
1410 - 1420		----	----	----	0
1420 - 1430		4.5	-4.7	----	3
1430 - 1440		----	-3.5	----	1
1440 - 1450		3.2	----	----	1
1450 - 1460		----	----	----	0
1460 - 1470		3.4	-4.9	----	2
1470 - 1480		3.4	----	----	1
1480 - 1490		----	----	----	0
1490 - 1500		7.3	----	----	2
^b 1500 - 1510		----	-2.8	----	1
1510 - 1520		9.7	----	----	3
1520 - 1530		----	----	----	0
1530 - 1540		6.7	-6.3	----	4
1540 - 1550		11.1	----	----	1
1550 - 1610		----	----	----	0
1610 - 1620	15,000	10.8	----	24.8	168
1620 - 1630		----	-14.4	----	1
1630 - 1640		4.8	-12.1	----	6
1640 - 1650	15,500	25.2	-14.7	----	6
1650 - 1660		8.3	-11.2	----	3
1660 - 1670		4.0	-10.5	----	6
1670 - 1680		1.9	-6.5	----	3
1680 - 1690	15,000	5.5	-4.0	6.4	130
1690 - 1700		5.3	----	----	1
1700 - 1710		----	-3.3	----	1
1710 - 1730		----	----	----	0
1730 - 1740	14,500	----	-9.9	----	1
1740 - 1750		4.7	-4.2	----	4
1750 - 1760		----	-3.6	----	2
1760 - 1770	15,000	----	----	----	0
1770 - 1780		----	-3.7	----	2

^bCloud exit.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 10, 1947 - Flight 36					
Airplane 354 - Traverse 1 Length of traverse 2989.8 sec					
1780 - 1790	15,000	----	-3.7	----	1
1790 - 1800	14,500	----	-3.7	----	1
1800 - 1810		----	----	----	0
1810 - 1820		----	-3.6	----	1
1820 - 1910		----	----	----	0
1910 - 1920		----	-4.5	----	1
1920 - 1930		4.2	----	----	3
1930 - 1940		----	----	----	0
^a 1940 - 1950		----	-4.0	----	1
1950 - 1960		----	-2.0	-6.5	1
1960 - 1970		----	-6.5	----	1
1970 - 1980		----	----	----	0
1980 - 1990		----	-3.8	----	1
1990 - 2000		2.4	-5.2	----	6
2000 - 2010		4.3	----	----	1
2010 - 2020		4.2	----	----	2
2020 - 2030		6.0	-9.7	----	6
2030 - 2040	15,000	----	----	----	0
2040 - 2050		7.2	-7.7	21.3	3
2050 - 2060		----	-8.7	----	1
2060 - 2070	14,500	4.7	-8.1	----	4
2070 - 2080		15.2	-4.3	----	9
2080 - 2090		10.3	-6.9	----	12
2090 - 2100	15,000	11.7	-6.2	----	4
2100 - 2110		----	-8.8	----	1
^b 2110 - 2120		----	----	----	0
2120 - 2150	14,500	----	----	----	0
2150 - 2160		----	-3.4	----	1
2160 - 2170		----	-5.3	----	1
2170 - 2180		7.5	----	----	3
2180 - 2190		3.0	-5.6	-12.1	6
2190 - 2200		3.1	----	----	3
2200 - 2250		----	----	----	0

^aCloud entry.^bCloud exit.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 10, 1947 - Flight 36					
Airplane 354 - Traverse 1 Length of traverse 2989.8 sec					
2250 - 2260	14,500	6.4	-----	-----	2
2260 - 2270		5.5	-10.1	-----	9
^a 2270 - 2280		9.0	-9.7	-----	7
2280 - 2290	15,000	9.6	-12.2	-----	12
2290 - 2300		5.8	-4.4	-----	3
2300 - 2310		4.4	-5.0	-----	5
2310 - 2320		9.7	-8.3	-----	8
2320 - 2330		6.3	-10.5	-----	7
2330 - 2340	14,500	-----	-4.7	----- -12.0	261
2340 - 2350		5.6	-6.4	-----	4
2350 - 2360	14,000	-----	-4.1	-----	1
2360 - 2380		-----	-----	-----	0
2380 - 2390		-----	-6.5	-----	1
2390 - 2400		-----	-2.6	-----	1
2400 - 2410		-----	-----	-----	0
2410 - 2420		5.6	-2.7	-----	4
2420 - 2430		-----	-----	-----	0
2430 - 2440		3.8	-----	-----	1
2440 - 2470		-----	-----	-----	0
2470 - 2480		4.0	-4.1	-----	3
2480 - 2490		-----	-5.9	-----	1
2490 - 2500		-----	-----	-----	0
2500 - 2510		3.3	-----	-----	1
2510 - 2520		-----	-----	-----	0
2520 - 2530		8.7	-8.2	-----	5
2530 - 2540		8.0	-2.8	-----	7
2540 - 2550		-----	-5.4	-----	1
2550 - 2560		3.4	-8.6	----- -2.8	146
2560 - 2570		3.2	-4.0	-----	2
2570 - 2580		-----	-4.0	-----	2
2580 - 2590		-----	-----	-----	0
2590 - 2600		4.0	-----	-----	1
2600 - 2610		3.9	-4.8	8.3	97

^aCloud entry.

NACA

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts	
September 10, 1947 - Flight 36						
Airplane 354 - Traverse 1 Length of traverse 2989.8 sec						
2610 - 2620	14,000	----	----	----	0	
^b 2620 - 2630		----	-9.3	----	12.1	
2630 - 2640		----	----	----	----	
2640 - 2710		----	----	----	----	
2710 - 2720		----	-3.7	----	----	
^a 2720 - 2730	14,500	4.0	-5.8	9.7	----	207
2730 - 2750		----	----	----	----	
2750 - 2770		----	----	----	----	
2770 - 2780		----	-3.7	----	-5.0	
2780 - 2790		----	-4.3	----	----	
2790 - 2810	15,000	----	----	----	----	
2810 - 2820		----	-4.3	----	----	
2820 - 2890		----	----	----	----	
2890 - 2920		----	----	----	----	
^b 2920 - 2930		----	----	----	----	
2930 - 2950	14,500	----	----	----	----	
2950 - 2960	14,000	2.1	-2.2	----	----	
2960 - 2970	13,500	----	----	----	----	
2970 - 2980	13,000	4.6	-3.1	----	----	
2980 - 2990	12,500	----	-3.9	----	----	
Airplane 354 - Traverse 2 Length of traverse 253.1 sec						
0 - 10	12,000	----	----	----	----	
10 - 20	12,500	----	----	----	----	
20 - 30	13,000	----	-8.4	----	----	
30 - 40		----	----	----	----	
^a 40 - 50		----	----	----	----	
50 - 60		7.6	-8.1	----	----	
60 - 70		4.9	-5.0	13.3	----	
70 - 80	13,500	8.0	-5.2	----	----	
80 - 90		6.9	-18.0	----	----	
90 - 100		----	-4.4	----	----	
100 - 110		4.2	-7.4	----	-12.7	
					----	201

^aCloud entry.^bCloud exit.

NACA

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)		Maximum true gust velocity $U_{t\max}$ (fps)		Gust gradient distance (ft)		No. of gusts
September 10, 1947 - Flight 36								
Airplane 354 - Traverse 2 Length of traverse 253.1 sec								
110 - 120	13,500	10.1	-11.0	----	-----	---	---	5
120 - 130		7.4	-4.2	----	-----	---	---	4
130 - 140	14,000	9.7	-----	----	-----	---	---	1
140 - 150		10.0	-10.9	----	-----	---	---	6
150 - 160		7.3	-7.6	----	-----	---	---	9
160 - 170		14.5	-16.7	----	-----	---	---	9
170 - 180	14,500	9.5	-16.0	----	-----	---	---	8
180 - 190		12.5	-13.5	----	-----	---	---	6
190 - 220		----	-----	----	-----	---	---	0
^b 220 - 230		----	-5.3	----	-----	---	---	1
230 - 260	14,000	----	-----	----	-----	---	---	0
Airplane 333 - Traverse 1 Length of traverse 2921.5 sec								
0 - 90	9,500	----	-----	----	-----	---	---	0
^a 90 - 100		14.9	-7.6	----	-----	---	---	3
100 - 110		27.9	-7.1	----	-----	---	---	5
110 - 120		5.2	-----	----	-----	---	---	1
120 - 130		5.7	-6.9	----	-----	---	---	7
130 - 140		4.9	-6.9	----	-----	---	---	5
140 - 150		8.6	-2.4	----	-----	---	---	4
150 - 160		8.5	-5.4	----	-----	---	---	2
160 - 170		4.5	-----	----	-----	---	---	2
170 - 180		----	-----	----	-----	---	---	0
^b 180 - 190		----	-----	----	-----	---	---	0
190 - 410		----	-----	----	-----	---	---	0
410 - 420		5.6	-----	9.4	-----	85	---	1
420 - 430		----	-----	----	-----	---	---	0
430 - 440		3.8	-----	7.6	-----	33	---	1
440 - 450		4.5	-----	----	-----	---	---	1
450 - 510		----	-----	----	-----	---	---	0
510 - 520		5.8	-----	----	-----	---	---	1
520 - 530		----	-3.0	----	-----	---	---	1

^aCloud entry.^bCloud exit.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 10, 1947 - Flight 36					
Airplane 333 - Traverse 1 Length of traverse 2921.5 sec					
530 - 540	9,500	----	-2.3	----	1
^a 540 - 570		----	----	----	0
570 - 580		----	----	----	0
^b 580 - 590		----	----	----	0
590 - 600		----	----	----	0
600 - 830		----	----	----	0
830 - 840		3.6	-3.1	5.8	2
840 - 850		8.6	-1.1	-1.8	2
850 - 860		10.0	-4.0	----	4
860 - 870		----	-3.2	----	1
870 - 880		2.9	----	----	1
880 - 890		----	-4.0	----	1
890 - 900		----	----	----	0
900 - 910		2.8	----	----	1
^a 910 - 920		6.0	-10.0	----	3
920 - 930		8.3	----	10.1	2
^b 930 - 940		----	-2.4	----	1
940 - 950		----	----	----	0
950 - 1020		----	----	----	0
^a 1020 - 1030		5.1	----	----	1
1030 - 1040	10,000	4.6	-5.7	-10.5	3
1040 - 1050		4.6	-7.2	----	2
^b 1050 - 1060		5.9	-10.5	----	2
1060 - 1070		----	-4.8	-6.5	2
^a 1070 - 1080		----	-3.3	-8.6	2
1080 - 1090		13.9	-10.6	----	7
1090 - 1100		13.2	-2.2	----	4
1100 - 1110		16.0	----	25.3	2
1110 - 1120		2.1	-13.4	----	3
1120 - 1130		11.5	-7.9	----	3
1130 - 1140	10,500	8.7	-11.4	9.0	5
1140 - 1150		7.2	-8.2	----	3
1150 - 1160		8.6	-7.3	----	4

^aCloud entry.
^bCloud exit.



TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)		Maximum true gust velocity $U_{t_{max}}$ (fps)		Gust gradient distance (ft)		No. of gusts
September 10, 1947 - Flight 36								
Airplane 333 - Traverse 1 Length of traverse 2921.5 sec								
1160 - 1170	10,500	8.4	-6.3	----	----	---	---	4
1170 - 1180		5.5	-5.2	----	----	---	---	5
1180 - 1190	11,000	9.6	-8.2	18.1	----	148	---	4
1190 - 1200	11,500	15.5	-10.7	----	----	---	---	7
1200 - 1210		----	-9.3	----	----	---	---	2
1210 - 1220		----	----	----	----	---	---	0
1220 - 1230		14.5	-5.9	----	----	---	---	4
1230 - 1240		6.0	-17.2	----	----	---	---	6
1240 - 1250		10.0	-8.4	----	----	---	---	6
1250 - 1260		16.4	-9.7	----	----	---	---	7
1260 - 1270		7.4	-6.9	----	----	---	---	6
1270 - 1280	12,000	9.8	-3.8	----	----	---	---	5
1280 - 1290		8.8	-10.1	----	-14.2	---	130	2
1290 - 1300		----	-8.8	----	-13.2	---	121	2
1300 - 1310		9.9	----	----	----	---	---	1
1310 - 1320		----	-5.7	----	----	---	---	3
1320 - 1330		4.5	-1.9	6.2	----	123	---	2
1330 - 1350		----	----	----	----	---	---	0
1350 - 1360		5.4	----	10.3	----	129	---	1
1360 - 1380		----	----	----	----	---	---	0
1380 - 1390		6.0	-3.0	----	----	---	---	5
1390 - 1400		----	-3.9	----	----	---	---	1
1400 - 1420		----	----	----	----	---	---	0
1420 - 1430		4.5	----	----	----	---	---	1
^b 1430 - 1440		----	----	----	----	---	---	0
1440 - 1450		----	----	----	----	---	---	0
1450 - 1480	11,500	----	----	----	----	---	---	0
1480 - 1490	10,500	----	----	----	----	---	---	0
1490 - 1500	10,000	----	----	----	----	---	---	0
1500 - 1520	9,500	----	----	----	----	---	---	0
1520 - 1530		----	-1.7	----	-3.0	---	320	1
1530 - 1540		----	----	----	----	---	---	0
1540 - 1550		----	-4.5	----	-9.6	---	442	1
^a 1550 - 1560	10,000	4.4	----	8.6	----	254	---	1

^aCloud entry.^bCloud exit.

NACA

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts	
September 10, 1947 - Flight 36						
Airplane 333 - Traverse 1 Length of traverse 2921.5 sec						
^b 1560 - 1570	10,000	----	----	---	0	
1570 - 1580	9,500	----	----	---	0	
1580 - 1590		----	-2.8	---	1	
1590 - 1630		----	----	---	0	
1630 - 1640		3.5	----	---	1	
1640 - 1660		----	----	---	0	
1660 - 1670		4.2	5.7	188	1	
1670 - 1700		----	----	---	0	
1700 - 1710		----	-2.2	---	1	
1710 - 1720		6.2	8.8	181	1	
1720 - 1780		----	----	---	0	
1780 - 1790		----	-2.3	---	1	
1790 - 1800		----	----	---	0	
1800 - 1810		5.9	----	---	1	
1810 - 1820		2.9	-1.8	-2.9	160	2
1820 - 1830		----	-3.2	---	1	
1830 - 1840		8.7	-4.0	9.8	47	5
1840 - 1850		----	----	---	0	
1850 - 1860		----	-4.1	---	2	
1860 - 1870		2.1	6.9	44	1	
1870 - 2120		----	----	---	0	
2120 - 2130		----	-3.9	---	2	
2130 - 2140		17.5	-7.8	---	6	
2140 - 2150		14.0	-9.3	---	9	
2150 - 2160		4.5	-7.9	---	4	
2160 - 2170		5.4	-3.3	9.5	30	2
2170 - 2180		3.8	4.8	136	1	
2180 - 2190		6.2	-6.3	---	8	
^a 2190 - 2200		10.2	-2.5	---	8	
^b 2200 - 2210		----	----	---	0	
2210 - 2230		----	----	---	0	
2230 - 2240		----	-2.4	-6.3	36	2
2240 - 2330		----	----	---	0	

^aCloud entry.^bCloud exit.

NACA

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 10, 1947 - Flight 36					
Airplane 333 - Traverse 1 Length of traverse 2921.5 sec					
2330 - 2340	9,500	7.4	-5.9	----	3
2340 - 2350		4.0	-7.6	9.0	5
^a 2350 - 2360		10.3	-5.5	----	5
2360 - 2370	10,000	5.0	-6.0	----	4
2370 - 2380		6.5	----	----	1
2380 - 2390		6.3	-12.2	10.2	3
2390 - 2400		----	-2.6	----	1
2400 - 2410	9,500	9.3	-6.1	----	4
2410 - 2420		7.9	-5.9	-6.9	3
2420 - 2430		----	-4.9	----	3
^b 2430 - 2450		----	----	----	0
2450 - 2460		----	----	----	0
2460 - 2730		----	----	----	0
2730 - 2740		4.7	-2.5	----	3
^a 2740 - 2750		16.8	----	-3.1	2
^a 2750 - 2760		----	----	----	0
2760 - 2770		5.3	-4.7	----	3
2770 - 2780		8.4	-5.6	13.6	3
2780 - 2790		8.1	-5.3	11.2	5
2790 - 2800		7.4	-3.1	----	4
2800 - 2810		11.5	-6.7	-7.8	3
2810 - 2820		4.6	-4.1	----	2
2820 - 2830		15.4	-7.9	----	2
2830 - 2840	10,000	9.3	-8.8	----	4
2840 - 2850		8.1	-11.1	----	4
^b 2850 - 2860		6.4	-6.0	----	6
2860 - 2870		----	----	----	0
2870 - 2930	9,500	----	----	----	0
September 10, 1947 - Flight 37					
Airplane 354 - Traverse 1 Length of traverse 797.5 sec					
0 - 10	24,000	7.0	-5.7	----	5
10 - 20	24,500	----	-8.3	----	1

^aCloud entry.^bCloud exit.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 10, 1947 - Flight 37					
Airplane 354 - Traverse 1 Length of traverse 797.5 sec					
20 - 30	24,000	9.6	-4.5	----	2
30 - 40		9.2	-----	5.5	2
40 - 50		3.5	-4.1	-----	3
50 - 60	24,500	3.5	-6.4	-----	3
60 - 70		4.1	-4.8	-----	5
70 - 80		4.5	-5.1	-----	4
80 - 90		9.9	-10.5	-----	10
90 - 100		11.5	-11.5	-----	8
100 - 110		8.3	-4.8	-----	3
110 - 130		-----	-----	-----	0
130 - 140		7.0	-6.4	-----	5
140 - 150		-----	-5.1	-----	3
150 - 160		-----	-----	-----	0
160 - 170	24,000	11.1	-9.6	-----	4
170 - 180		15.6	-9.6	-----	7
^a 180 - 190		13.4	-8.0	-----	7
190 - 200		5.4	-9.9	-----	2
200 - 250	24,500	-----	-----	-----	0
250 - 260	24,000	-----	-----	-----	0
260 - 270		5.7	-3.5	-----	2
270 - 280	24,500	8.9	-3.5	-----	2
280 - 300		-----	-----	-----	0
^b 300 - 310	25,000	5.4	-----	-----	1
310 - 320		12.1	-8.3	-----	4
320 - 330		-----	-7.0	-----	1
330 - 340	24,500	6.4	-4.1	-----	2
340 - 350		-----	-4.1	-----	2
350 - 360		5.1	-----	-----	1
360 - 370		15.0	-----	18.8	1
370 - 380		9.6	-4.5	-----	2
380 - 390		.6	-5.1	-----	1
390 - 400		-----	-2.9	-----	1
^a 400 - 620		-----	-----	-----	0
^a 620 - 630	24,000	16.2	-13.7	-----	4

^aCloud entry.^bCloud exit.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 10, 1947 - Flight 37					
Airplane 354 - Traverse 1 Length of traverse 797.5 sec					
630 - 640	24,000	----	-----	----	0
640 - 650		12.7	-13.4	----	4
650 - 660		5.7	-----	----	1
660 - 690		----	-----	----	0
690 - 700		6.1	-----	----	1
700 - 710	24,500	9.9	-3.5	----	5
710 - 720		8.3	-6.7	----	8
720 - 730		5.4	-7.6	----	3
730 - 740		----	-9.6	----	2
740 - 750		----	-----	----	0
750 - 760	24,000	3.8	-4.8	----	4
^b 760 - 790		----	-----	----	0
^b 790 - 800		----	-----	----	0
Airplane 354 - Traverse 2 Length of traverse 1847.7 sec					
^a 0 - 90	24,500	----	-----	----	0
90 - 100	24,000	10.4	-4.7	----	5
100 - 110		9.8	-6.0	----	4
110 - 120		8.8	-7.2	----	4
120 - 130		13.6	-5.7	----	4
130 - 140		10.1	-6.6	----	4
^b 140 - 170		----	-----	----	0
^b 170 - 180		----	-----	----	0
180 - 290		----	-----	----	0
290 - 300		----	-3.8	----	1
300 - 310		----	-----	----	0
310 - 320	24,500	10.7	-8.5	14.9	5
320 - 330	24,000	----	-4.7	----	1
330 - 340		----	-----	----	0
340 - 350		----	-7.2	----	1
350 - 360		7.2	-6.3	----	3

^aCloud entry.^bCloud exit.

NACA

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts			
September 10, 1947 - Flight 37								
Airplane 354 - Traverse 2 Length of traverse 1847.7 sec								
^a 360 - 370	24,000	7.2	-5.0	----	-9.8	---	57	3
370 - 380		7.2	-10.4	----	-----	---	---	5
380 - 390	24,500	----	-15.1	----	-----	---	---	1
390 - 400		11.3	-5.4	----	-----	---	---	5
400 - 410	24,000	24.3	-14.2	----	-----	---	---	7
410 - 420		13.9	-10.7	----	-----	---	---	7
^b 420 - 430		6.9	-----	----	-----	---	---	3
430 - 440		----	-----	----	-----	---	---	0
440 - 460		----	-----	----	-----	---	---	0
460 - 590	24,500	----	-----	----	-----	---	---	0
^a 590 - 600		9.1	-8.1	15.8	-----	179	---	4
600 - 610	24,000	4.1	-8.8	28.8	-----	227	---	4
610 - 620		13.2	-14.7	----	-----	---	---	8
620 - 630		12.5	-11.3	----	-----	---	---	4
630 - 640		16.3	-12.9	----	-----	---	---	3
^b 640 - 680		----	-----	----	-----	---	---	0
680 - 690		----	-5.0	----	-----	---	---	1
690 - 700		----	-3.4	----	-----	---	---	1
700 - 710	23,500	16.0	-3.4	----	-----	---	---	5
710 - 720		----	-3.8	----	-----	---	---	2
720 - 740		----	-----	----	-----	---	---	0
740 - 750	24,000	11.0	-7.5	----	-----	---	---	3
750 - 760		7.2	-6.6	----	-----	---	---	7
760 - 770		9.1	-6.6	----	-----	---	---	4
770 - 800		----	-----	----	-----	---	---	0
800 - 810		----	-4.1	----	-8.5	---	183	1
^a 810 - 820		6.6	-10.3	----	-----	---	---	6
820 - 830	23,500	13.2	-11.6	----	-----	---	---	4
830 - 840		9.7	-4.4	----	-----	---	---	6
840 - 850		7.5	-9.1	----	-----	---	---	4
850 - 860	24,000	10.7	-14.4	----	-----	---	---	5
860 - 870		5.6	-----	----	-----	---	---	1
870 - 880		11.9	-12.2	----	-----	---	---	4
880 - 890		6.0	-6.0	----	-----	---	---	4

^aCloud entry.
^bCloud exit.

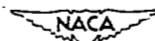


TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 10, 1947 - Flight 37					
Airplane 354 - Traverse 2 Length of traverse 1847.7 sec					
890 - 900	24,000	6.0	-3.4	----	3
^b 900 - 910	24,500	----	----	----	0
910 - 1040		----	----	----	0
^a 1040 - 1050		10.0	-10.9	11.8 -19.6	2
1050 - 1060	24,000	----	----	----	0
1060 - 1070		6.6	----	----	1
1070 - 1080		10.0	-6.6	----	5
1080 - 1090		8.1	-5.9	----	5
1090 - 1290		----	----	----	0
1290 - 1300		----	-8.1	----	1
1300 - 1310		----	-5.0	----	1
1310 - 1320		8.1	-7.8	23.4 -8.6	4
^a 1320 - 1330		8.4	-5.0	101 -	2
1330 - 1340		8.1	----	----	1
1340 - 1360		----	----	----	0
1360 - 1370		5.3	-6.6	----	2
1370 - 1380	23,500	----	----	----	0
1380 - 1390	24,000	5.3	----	----	1
1390 - 1410		----	----	----	0
1410 - 1420		----	-8.1	----	1
1420 - 1430		8.7	-12.8	15.7 -	9
^b 1430 - 1440	23,500	9.7	----	----	1
1440 - 1450		3.4	-4.3	----	2
1450 - 1520		----	----	----	0
1520 - 1530	24,000	----	----	----	0
1530 - 1550	24,500	----	----	----	0
1550 - 1620	24,000	----	----	----	0
1620 - 1630		4.7	----	----	1
1630 - 1640		10.2	----	----	2
1640 - 1650		----	-5.3	----	1
1650 - 1660		7.4	-8.7	----	3
^a 1660 - 1670		6.2	-9.3	----	4
1670 - 1680	23,500	7.8	-5.3	-7.8 -	4
1680 - 1690		----	----	----	0

^aCloud entry.^bCloud exit.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)		Maximum true gust velocity $U_{t_{max}}$ (fps)		Gust gradient distance (ft)		No. of gusts
September 10, 1947 - Flight 37								
Airplane 354 - Traverse 2 Length of traverse 1847.7 sec								
1690 - 1700	23,500	10.9	-8.4	----	-----	---	---	5
1700 - 1710	23,000	5.6	-4.3	----	-----	---	---	3
1710 - 1720		3.7	-3.7	----	-----	---	---	3
1720 - 1730		8.7	-5.0	13.4	-----	301	---	7
1730 - 1740		13.0	-----	-----	-----	---	---	3
1740 - 1750		6.5	-6.5	-----	-----	---	---	10
b 1750 - 1760	23,500	-----	-4.7	-----	-----	---	---	1
1760 - 1770		-----	-7.4	-----	-7.7	---	206	3
1770 - 1790	23,000	-----	-----	-----	-----	---	---	0
1790 - 1800	22,500	-----	-----	-----	-----	---	---	0
1800 - 1810	21,500	-----	-----	-----	-----	---	---	0
1810 - 1820	21,000	-----	-3.4	-----	-----	---	---	2
1820 - 1830	20,500	9.9	-5.6	-----	-13.8	---	182	8
1830 - 1840	21,000	13.0	-4.0	12.0	-----	176	---	3
1840 - 1850		12.4	-----	-----	-----	---	---	1
Airplane 348 - Traverse 1 Length of traverse 744.0 sec								
0 - 30	19,500	-----	-----	-----	-----	---	---	0
30 - 50	19,000	-----	-----	-----	-----	---	---	0
50 - 60		2.2	-----	-----	-----	---	---	1
60 - 70	19,500	-----	-3.2	-----	-5.8	---	200	1
70 - 110		-----	-----	-----	-----	---	---	0
110 - 120		2.6	-----	-----	-----	---	---	1
120 - 130		1.9	-4.1	-----	-----	---	---	4
130 - 140		5.1	-5.7	-----	-----	---	---	3
140 - 160		-----	-----	-----	-----	---	---	0
a 160 - 170		3.8	-6.7	7.1	-----	284	---	5
170 - 180		5.1	-6.1	-----	-----	---	---	4
180 - 190		3.2	-2.9	-----	-----	---	---	4
190 - 200	19,000	1.9	-----	-----	-----	---	---	1
200 - 210		-----	-5.7	-----	-----	---	---	2

^aCloud entry.^bCloud exit.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts				
September 10, 1947 - Flight 37									
Airplane 348 - Traverse 1 Length of traverse 744.0 sec									
210 - 220	19,000	4.5	-----	8.2	-----	207	---	1	
220 - 230		2.6	-6.4	----	-----	---	---	5	
230 - 240		7.0	-4.2	----	-----	---	---	5	
240 - 250		8.3	-6.1	----	-----	---	---	10	
250 - 260		7.0	-8.9	----	-----	---	---	8	
260 - 270		15.6	-16.0	----	-----	---	---	9	
270 - 280		11.5	-11.5	----	-----	---	---	10	
280 - 290		3.8	-5.4	----	-----	---	---	8	
290 - 300		5.7	-10.2	----	-----	---	---	6	
300 - 310		7.0	-5.1	----	-----	---	---	4	
310 - 320	19,500	4.8	-6.7	----	-----	---	---	8	
320 - 330		7.3	-9.9	----	-----	---	---	9	
330 - 340		5.1	-----	----	-----	---	---	1	
^b 340 - 350		----	-----	----	-----	---	---	0	
350 - 360		20,000	----	-----	----	-----	---	---	0
360 - 370			----	-7.0	----	-18.9	---	322	1
370 - 380			----	-----	----	-----	---	---	0
380 - 390		19,000	3.5	-5.7	----	-----	---	---	2
390 - 400		19,500	----	-----	----	-----	---	---	0
^a 400 - 410		19,000	6.4	-6.7	----	-----	---	---	4
410 - 420	2.6		-9.9	----	-----	---	---	3	
420 - 430	7.7		-----	----	-----	---	---	3	
430 - 440	4.8		-----	----	-----	---	---	1	
440 - 450	7.3		-7.0	16.7	-----	189	---	8	
450 - 460	19,500		11.5	-11.5	----	-----	---	---	9
460 - 470	19,000		10.9	-14.7	----	-----	---	---	7
470 - 480	19,500		6.4	-7.7	----	-----	---	---	3
480 - 490			6.4	-6.4	----	-----	---	---	7
490 - 500			6.1	-7.7	----	-----	---	---	5
500 - 510		6.7	-15.3	----	-----	---	---	6	
510 - 520	19,000	10.2	-12.8	----	-----	---	---	9	
520 - 530		7.3	-9.9	----	-----	---	---	6	
530 - 540		3.2	-4.5	9.9	-----	94	---	3	
540 - 550		----	-4.8	----	-----	---	---	1	

^aCloud entry.^bCloud exit.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts			
September 10, 1947 - Flight 37								
Airplane 348 - Traverse 1 Length of traverse 744.0 sec								
^b 730 - 740	19,500	----	-----	----	-----	---	---	0
740 - 750		----	-----	----	-----	---	---	0
Airplane 348 - Traverse 2 Length of traverse 1884.9 sec								
0 - 110	19,500	----	-----	----	-----	---	---	0
110 - 120		2.9	-----	----	-----	---	---	1
120 - 130		1.6	-4.8	7.0	-----	118	---	2
130 - 140		4.4	-7.3	-----	-----	---	---	6
140 - 150		7.6	-8.5	-----	-----	---	---	11
^a 150 - 160		5.4	-8.2	-----	-----	---	---	7
160 - 170		7.0	-8.5	-----	-----	---	---	5
170 - 180		8.2	-6.3	4.4	-----	64	---	5
180 - 190		7.0	-14.9	-----	-----	---	---	9
190 - 200		6.0	-10.1	-----	-----	---	---	12
200 - 210		4.1	-13.6	13.8	-----	135	---	7
210 - 220		2.2	-3.8	-----	-----	---	---	2
220 - 230		2.9	-3.8	-----	-----	---	---	2
230 - 240		6.6	-7.6	-----	-----	---	---	6
240 - 250		14.2	-7.3	-----	-----	---	---	5
250 - 260		7.3	-6.0	14.8	-----	300	---	5
^b 260 - 270		-----	-----	-----	-----	---	---	0
270 - 280		-----	-----	-----	-----	---	---	0
280 - 490		-----	-----	-----	-----	---	---	0
490 - 520	19,000	-----	-----	-----	-----	---	---	0
520 - 530		1.3	-----	-----	-----	---	---	1
530 - 540		-----	-4.4	-----	-----	---	---	1
540 - 550	19,500	2.5	-----	-----	-----	---	---	1
550 - 560		-----	-6.9	-----	-----	---	---	1
560 - 570	19,000	2.8	-6.3	-----	-----	---	---	5
570 - 580		5.7	-5.0	-----	-----	---	---	9
580 - 590		8.2	-6.0	-----	-----	---	---	5
590 - 600		4.4	-6.0	-----	-----	---	---	5

^aCloud entry.^bCloud exit.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 10, 1947 - Flight 37					
Airplane 348 - Traverse 2 Length of traverse 1884.9 sec					
600 - 610	19,000	5.4	-4.7	---	6
610 - 620		---	-6.9	---	1
620 - 630		7.6	-8.2	---	8
630 - 640		4.4	-6.6	---	4
640 - 650		8.2	-5.4	---	4
650 - 660		3.2	-4.7	---	5
660 - 670		3.5	-4.7	---	4
670 - 680		2.2	-5.7	---	6
680 - 690		7.6	-8.8	---	8
690 - 700		---	---	---	0
700 - 880	19,500	---	---	---	0
880 - 890	19,000	5.0	-5.4	---	3
890 - 900		7.6	-5.7	---	10
^a 900 - 910		4.7	-7.6	---	7
910 - 920		4.4	-5.7	---	3
920 - 930		7.2	-6.6	10.6 -9.3	5
930 - 940		4.4	-3.8	---	2
940 - 950	19,500	5.4	-6.0	---	5
950 - 960		2.5	-6.0	---	3
960 - 970		---	-5.3	---	1
970 - 980		2.8	---	---	1
980 - 990		---	-4.4	---	1
990 - 1000		1.9	---	84	1
1000 - 1010		---	---	---	0
1010 - 1020		---	-4.4	---	1
1020 - 1030		2.5	---	---	1
1030 - 1040	19,000	2.8	---	59	1
1040 - 1050		---	---	---	0
1050 - 1060		---	-4.4	---	1
1060 - 1070	19,500	4.4	-6.3	---	6
1070 - 1080	19,000	4.1	-8.5	---	5
^b 1080 - 1090		4.1	-4.7	---	3
1090 - 1100		8.8	-6.6	---	6

^aCloud entry.^bCloud exit.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts	
September 10, 1947 - Flight 37						
Airplane 348 - Traverse 2 Length of traverse 1884.9 sec						
1100 - 1110	19,500	5.0	-5.0	----	4	
1110 - 1120		----	-5.6	----	1	
1120 - 1130	19,000	----	----	----	0	
1130 - 1140		7.8	----	----	2	
1140 - 1150		5.6	-2.5	----	2	
1150 - 1160		8.5	----	----	2	
1160 - 1170		6.3	----	----	1	
1170 - 1180		----	-5.3	----	1	
1180 - 1190		----	----	----	0	
1190 - 1200		6.9	----	----	1	
1200 - 1240		----	6.5	90	0	
1240 - 1250		3.5	----	----	1	
1250 - 1260		2.8	----	----	1	
^a 1260 - 1270		----	----	----	0	
1270 - 1280		2.5	-4.4	8.2	44	3
1280 - 1290		4.4	-4.4	----	----	2
1290 - 1300		----	-6.0	----	----	2
1300 - 1310		----	----	----	----	0
1310 - 1320		6.3	----	----	----	2
1320 - 1330		7.5	----	----	----	3
1330 - 1340		4.0	-4.7	----	----	4
1340 - 1370		----	----	----	----	0
1370 - 1380		----	-4.4	----	----	1
1380 - 1390		2.8	----	----	----	1
1390 - 1400		----	----	----	----	0
1400 - 1410		2.8	----	3.4	192	1
1410 - 1450		----	----	----	----	0
1450 - 1460		.9	----	----	----	1
1460 - 1470		3.7	----	----	----	1
1470 - 1480		2.1	----	----	----	1
1480 - 1490		2.1	-5.9	----	----	8
1490 - 1500		4.7	-4.7	----	-10.8	6
1500 - 1510		4.7	-13.1	----	----	8
1510 - 1520		10.3	-7.5	2.4	97	4

^aCloud entry.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts		
September 10, 1947 - Flight 37							
Airplane 348 - Traverse 2 Length of traverse 1884.9 sec							
b 1520 - 1590	19,000	----	----	----	0		
b 1590 - 1600		----	----	----	0		
1600 - 1700		----	----	----	0		
1700 - 1710		1.6	----	----	2		
1710 - 1790	19,500	----	----	----	0		
a 1790 - 1800		----	----	----	0		
a 1800 - 1810		----	----	----	0		
b 1810 - 1880	19,000	----	----	----	0		
b 1880 - 1890		----	----	----	0		
Airplane 333 - Traverse 1 Length of traverse 583.4 sec							
0 - 380	15,000	----	----	----	0		
380 - 390	14,500	7.5	-5.4	----	5		
390 - 400	15,000	3.6	-9.1	----	3		
a 400 - 410		14.2	-9.6	----	6		
410 - 420		11.5	-11.0	----	5		
420 - 430		9.8	-6.5	----	4		
430 - 440		4.6	-6.3	----	4		
440 - 450		8.0	-6.9	----	7		
450 - 460		3.4	----	----	2		
460 - 470	14,500	2.7	----	----	1		
470 - 480		5.7	----	----	1		
480 - 490		3.5	-4.4	9.3	70	3	
490 - 520		----	----	----	----	0	
520 - 530		6.2	-4.3	----	----	3	
530 - 540		9.2	-5.1	----	----	5	
540 - 550		2.7	-5.0	----	----	2	
550 - 560	14,500	----	----	----	0		
560 - 570		----	-3.0	----	----	1	
b 570 - 580		----	-3.7	----	-3.9	292	1
580 - 590		----	----	----	----	0	

^aCloud entry.^bCloud exit.

NACA

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 10, 1947 - Flight 37					
Airplane 333 - Traverse 2 Length of traverse 1152.0 sec					
0 - 10	15,000	----	----	----	0
10 - 50	14,500	----	----	----	0
50 - 60	15,000	----	-5.3	----	4
60 - 70		----	----	----	0
^a 70 - 80		7.9	-5.8	----	6
80 - 90		10.0	-5.7	----	6
90 - 100	14,500	9.0	-3.4	----	5
100 - 110	15,000	6.8	-7.1	----	3
110 - 140		----	----	----	0
140 - 150		----	-2.2	----	1
150 - 160	14,500	3.5	-6.0	----	3
160 - 170		9.4	----	12.2	181
170 - 180		11.4	-2.8	----	2
180 - 190		----	-2.8	----	1
190 - 200		----	-5.8	----	2
200 - 210	15,000	4.8	-4.4	----	4
^b 210 - 220		----	----	----	0
220 - 230		----	----	----	0
230 - 370		----	----	----	0
^a 370 - 380	14,500	8.1	----	3.6	58
380 - 390		7.8	-7.0	----	3
390 - 400		3.4	-4.4	----	2
400 - 410	15,000	----	-2.9	----	1
410 - 420		----	-6.1	----	2
420 - 430		----	----	----	0
430 - 440	14,500	5.3	----	----	1
440 - 460		----	----	----	0
460 - 480	15,000	----	----	----	0
480 - 490	14,500	6.8	-16.3	----	3
490 - 500		11.5	-1.6	----	5
500 - 510		2.7	-5.7	----	5
^b 510 - 520		----	----	----	0
520 - 530		----	----	----	0

^aCloud entry.^bCloud exit.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 10, 1947 - Flight 37					
Airplane 333 - Traverse 2 Length of traverse 1152.0 sec					
^a 530 - 680	14,500	----	-----	----	0
680 - 690		----	-----	----	0
690 - 700	15,000	----	-4.4	-13.6	1
700 - 710		----	-----	----	0
710 - 720	14,500	6.1	-4.2	----	3
720 - 730		----	-----	----	0
730 - 740		8.3	-6.5	----	3
740 - 750		5.1	-9.8	----	5
750 - 760		----	-5.5	----	1
760 - 770		1.9	-4.3	----	2
770 - 780		4.7	-5.7	7.2	5
780 - 790		1.9	-5.8	----	4
790 - 800	15,000	5.6	-3.6	----	2
800 - 810		4.3	-3.0	9.6	2
810 - 820		4.1	-3.0	-6.6	4
820 - 830		9.0	-5.6	----	4
^b 830 - 920		----	-----	----	0
920 - 930		----	-----	----	0
930 - 970		----	-----	----	0
^a 970 - 980	14,500	----	-----	----	0
980 - 990		11.8	----	8.1	2
990 - 1000		----	-4.3	----	2
1000 - 1010		----	-9.1	----	4
1010 - 1020		3.3	-3.7	----	2
1020 - 1030		----	-----	----	0
1030 - 1040		5.7	-5.8	----	2
1040 - 1060		----	-----	----	0
1060 - 1070		5.5	----	----	1
1070 - 1080	15,000	----	-4.5	----	2
1080 - 1090		5.6	-5.3	----	4
1090 - 1100	14,500	8.5	----	----	2
1100 - 1110		5.2	-4.7	----	3
1110 - 1120		6.6	-2.7	----	2

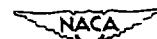
^aCloud entry.^bCloud exit.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 10, 1947 - Flight 37					
Airplane 333 - Traverse 2 Length of traverse 1152.0 sec					
1120 - 1130	14,500	----	-2.7	----	1
1130 - 1150	15,000	----	----	----	0
^b 1150 - 1160		----	----	----	0
Airplane 360 - Traverse 1 (c-d) Length of traverse 886.4 sec					
0 - 10	10,000	----	-3.9	----	1
10 - 20		----	-7.9	----	1
20 - 30		----	----	----	0
30 - 40		----	-3.7	----	1
40 - 60		----	----	----	0
60 - 70		----	-4.0	----	1
70 - 130		----	----	----	0
130 - 140		7.1	----	----	5
140 - 150		----	-3.7	----	1
150 - 160		2.4	-6.9	-10.1	4
160 - 170		4.4	----	----	2
170 - 180		4.7	-4.4	20.3	3
180 - 190		4.8	-8.4	----	4
190 - 200		9.6	-3.8	----	5
200 - 210		11.6	-5.4	----	2
210 - 220		11.7	-6.7	----	3
220 - 230		9.1	-7.3	----	2
230 - 240		----	-8.3	----	2
240 - 250		5.2	-4.5	----	2
250 - 260		6.1	----	----	4
260 - 270		3.7	-15.2	-26.9	4
270 - 280		7.2	-10.0	----	6
280 - 290		4.5	-4.2	7.5	5

^bCloud exit.^cFailure in operation of airspeed-altitude recorder prevented computation of altitude. The average altitude as read from the photo-panel pictures was used to compute the gust velocities.^dCloud-entry marker inoperative.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 10, 1947 - Flight 37					
Airplane 360 - Traverse 1 (c-d) Length of traverse 886.4 sec					
290 - 300	10,000	----	-4.4	----	1
300 - 330		----	-----	----	0
330 - 340		3.9	-5.6	----	3
340 - 350		5.4	-5.3	----	4
350 - 360		4.0	-7.5	8.8 -6.3	3
360 - 500		----	-----	----	0
500 - 510		----	-7.3	----	1
510 - 520		2.6	-3.8	----	2
520 - 530		2.1	-2.0	----	2
530 - 560		----	-----	----	0
560 - 570		----	-4.0	----	1
570 - 580		4.9	-3.5	----	5
580 - 590		3.3	-12.5	----	2
590 - 600		----	-4.1	----	1
600 - 610		----	-5.5	----	1
610 - 620		2.8	-6.4	9.6	5
620 - 630		----	-----	----	0
630 - 640		3.5	-----	----	1
640 - 650		7.6	-6.6	----	4
650 - 660		4.2	-----	----	1
660 - 670		4.2	-5.3	5.7	2
670 - 680		4.1	-----	4.2	3.
680 - 690		----	-7.5	----	1
690 - 700		2.6	-11.7	13.7	6
700 - 710		----	-6.2	----	1
710 - 720		5.1	-----	----	1
720 - 730		----	-5.3	----	2
730 - 740		4.8	-7.1	5.1 -15.9	5
740 - 750		----	-----	----	0
750 - 760		----	-11.0	----	2
760 - 770		5.1	-8.6	----	7
770 - 780		----	-----	----	0

^cFailure in operation of airspeed-altitude recorder prevented computation of altitude. The average altitude as read from the photo-panel pictures was used to compute the gust velocities.

^dCloud-entry marker inoperative.

NACA

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)		Maximum true gust velocity $U_{t_{max}}$ (fps)		Gust gradient distance (ft)		No. of gusts
September 10, 1947 - Flight 37								
Airplane 360 - Traverse 1 (c-d) Length of traverse 886.4 sec								
780 - 790	10,000	4.8	-11.7	----	-----	---	---	4
790 - 800		4.8	-7.5	----	-----	---	---	4
800 - 890		----	-----	----	-----	---	---	0
Airplane 360 - Traverse 2 (c-d) Length of traverse 1364.8 sec								
0 - 110	10,000	----	-----	----	-----	---	---	0
110 - 120		4.7	-4.8	5.9	-----	58	---	3
120 - 130		4.8	-4.7	-----	-----	---	---	2
130 - 140		5.6	-4.8	12.7	-----	95	---	6
140 - 160		----	-----	----	-----	---	---	0
160 - 170		4.6	-10.3	----	-----	---	---	2
170 - 180		6.2	-4.1	11.5	-----	130	---	2
180 - 190		3.5	-----	6.3	-----	55	---	1
190 - 200		4.1	-----	-----	-----	---	---	1
200 - 210		----	-----	----	-----	---	---	0
210 - 220		----	-6.3	-----	-----	---	---	1
220 - 230		5.9	-6.0	----	-----	---	---	9
230 - 240		----	-----	----	-----	---	---	0
240 - 250		6.2	-6.6	----	-----	---	---	3
250 - 260		4.8	-9.8	----	-----	---	---	5
260 - 270		15.2	-8.0	----	-----	---	---	5
270 - 470		----	-----	----	-----	---	---	0
470 - 480		7.5	-3.8	----	-----	---	---	3
480 - 490		----	-----	----	-----	---	---	0
490 - 500		----	-3.5	----	-----	---	---	1
500 - 510		----	-3.5	----	-5.8	---	101	1
510 - 530		----	-----	----	-----	---	---	0
530 - 540		----	-5.1	----	-----	---	---	1

^cFailure in operation of airspeed-altitude recorder prevented computation of altitude. The average altitude as read from the photo-panel pictures was used to compute the gust velocities.

^dCloud-entry marker inoperative.



TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts	
September 10, 1947 - Flight 37						
Airplane 360 - Traverse 2 (c-d) Length of traverse 1364.8 sec						
540 - 550	10,000	4.1	-----	-----	1	
550 - 590		-----	-----	-----	0	
590 - 600		-----	-3.6	-----	1	
600 - 800		-----	-----	-----	0	
800 - 810		-----	-4.8	-----	1	
810 - 820		-----	-----	-----	0	
820 - 830		-----	-3.7	-----	1	
830 - 840		7.8	-4.5	-----	6	
840 - 850		5.8	-----	-----	1	
850 - 870		-----	-----	-----	0	
870 - 880		-----	-3.1	-----	1	
880 - 890		-----	-----	-----	0	
890 - 900		-----	-3.3	-----	1	
900 - 910		-----	-----	-----	0	
910 - 920		2.4	-3.5	-----	2	
920 - 930		-----	-----	-----	0	
930 - 940		-----	-3.5	-----	1	
940 - 950		4.9	-----	-----	4	
950 - 960		4.8	-4.1	-----	1	
960 - 970		-----	-----	-----	0	
970 - 980		3.2	-9.6	-----	3	
980 - 1370		-----	-----	-----	0	
September 15, 1947 - Flight 38						
Airplane 354 - Traverse 1 Length of traverse 518.1 sec						
0 - 100	24,500	-----	-----	-----	0	
100 - 110		3.4	-----	6.9	1	
110 - 140		-----	-----	-----	0	
140 - 150		-----	-5.2	-12.6	1	

^cFailure in operation of airspeed-altitude recorder prevented computation of altitude. The average altitude as read from the photo-panel pictures was used to compute the gust velocities.

^dCloud-entry marker inoperative.

NACA

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 15, 1947 - Flight 38					
Airplane 354 - Traverse 1 Length of traverse 518.1 sec					
150 - 160	24,500	----	----	---	0
^a 160 - 170		4.1	-3.0	---	5
170 - 180		9.3	-11.3	---	3
180 - 190		10.5	-4.2	---	2
190 - 200	25,000	7.5	-6.1	---	4
200 - 210		5.6	-8.9	---	7
210 - 220		13.8	-7.9	---	7
220 - 230	25,500	11.2	-13.3	---	7
230 - 240	25,000	----	-25.3	---	2
240 - 330		----	----	---	0
330 - 340		5.3	----	---	1
340 - 350		1.8	----	---	1
350 - 360		----	----	---	0
360 - 370		4.0	----	---	1
370 - 380		3.8	----	---	2
380 - 420		----	----	---	0
^b 420 - 460	24,500	----	----	---	0
460 - 470		----	----	---	0
470 - 520		----	----	---	0
Airplane 354 - Traverse 2 Length of traverse 412.3 sec					
0 - 80	24,500	----	----	---	0
80 - 90		4.0	----	---	1
90 - 220		----	----	---	0
^a 220 - 230		----	----	---	0
230 - 270		----	----	---	0
270 - 280	25,000	----	-3.8	---	1
280 - 290	24,500	----	----	---	0
290 - 300		10.7	----	371	1
300 - 310	24,000	----	-5.9	---	2
310 - 320		----	----	---	0
320 - 330	24,500	----	----	---	0

^aCloud entry.^bCloud exit.

NACA

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 15, 1947 - Flight 38					
Airplane 354 - Traverse 2 Length of traverse 412.3 sec					
330 - 370	24,500	----	-----	----	0
^b 370 - 400	25,000	----	-----	----	0
400 - 410		----	-----	----	0
410 - 420		----	-----	----	0
Airplane 354 - Traverse 3 Length of traverse 224.6 sec					
^a 0 - 60	24,500	----	-----	----	0
60 - 70		----	-----	----	0
^b 70 - 100		----	-----	----	0
100 - 110		----	-----	----	0
110 - 230		----	-----	----	0
Airplane 354 - Traverse 4 Length of traverse 439.8 sec					
^a 0 - 40	24,500	----	-----	----	0
40 - 50		----	-----	----	0
50 - 430		----	-----	----	0
^b 430 - 440		----	-----	----	0
Airplane 354 - Traverse 5 Length of traverse 411.1 sec					
^a 0 - 40	24,500	----	-----	----	0
40 - 50		----	-----	----	0
50 - 260		----	-----	----	0
^b 260 - 400	24,000	----	-----	----	0
400 - 410		----	-----	----	0
410 - 420		----	-----	----	0

^aCloud entry.^bCloud exit.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 15, 1947 - Flight 38					
Airplane 356 - Traverse 1 Length of traverse 691.1 sec					
0 - 150	20,000	----	----	----	0
150 - 160		4.9	----	----	1
160 - 260		----	----	----	0
^a 260 - 270		3.5	-9.4	7.5	3
270 - 280		5.9	-6.4	----	8
280 - 290		3.3	----	4.4	2
290 - 300		4.8	----	9.8	1
300 - 310		7.5	----	----	1
310 - 320		11.3	-1.3	----	6
320 - 330		----	-8.9	----	2
330 - 350		----	----	----	0
350 - 360		----	-3.3	----	1
360 - 390		----	----	----	0
390 - 400		1.4	-4.1	----	2
400 - 420		----	----	----	0
420 - 430		6.8	-4.7	15.3	7
430 - 440		8.7	-8.8	----	5
440 - 450		3.9	-7.8	----	5
450 - 460		5.5	-6.5	----	4
460 - 470		4.0	-2.9	4.4	3
470 - 480		----	----	----	0
480 - 490		8.3	----	----	2
490 - 500		6.6	-4.6	----	8
500 - 510		4.9	-9.3	----	3
510 - 520		4.1	-3.1	----	2
520 - 530		----	----	----	0
530 - 540		----	-2.7	-6.4	1
540 - 550		4.9	-5.9	----	3
550 - 560		3.6	----	----	1
560 - 570		----	-5.0	----	1
^b 570 - 580		----	----	----	0
580 - 590		3.1	----	----	2
590 - 700		----	----	----	0

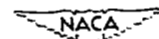
^aCloud entry.^bCloud exit.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)		Maximum true gust velocity $U_{t\max}$ (fps)		Gust gradient distance (ft)		No. of gusts
September 15, 1947 - Flight 38								
Airplane 356 - Traverse 2 Length of traverse 307.6 sec								
0 - 170	20,000	----	----	----	----	---	---	0
^a 170 - 180		4.2	-5.6	8.6	----	120	---	3
180 - 190		6.1	-5.0	----	----	---	---	6
190 - 200		5.2	-5.6	----	----	---	---	6
200 - 210		3.7	-6.3	3.5	----	65	---	7
210 - 220		5.2	-6.1	----	----	---	---	7
220 - 230		3.3	-7.1	----	----	---	---	4
230 - 240		8.2	-8.2	----	----	---	---	4
240 - 250		----	-5.3	----	----	---	---	2
250 - 260		1.2	-6.2	----	----	---	---	2
260 - 270		3.3	-8.6	5.2	-15.1	115	194	4
^b 270 - 280		1.7	----	----	----	----	---	1
280 - 290		----	----	----	----	----	---	0
290 - 310		----	----	----	----	----	---	0
Airplane 356 - Traverse 3 Length of traverse 1000.8 sec								
0 - 210	20,000	----	----	----	----	---	---	0
210 - 220		1.7	----	----	----	---	---	2
220 - 290		----	----	----	----	---	---	0
290 - 300		3.2	-3.7	----	----	---	---	2
300 - 310		6.6	-3.6	----	----	---	---	4
^a 310 - 320		6.8	----	----	----	---	---	5
320 - 330		7.1	----	----	----	---	---	4
330 - 360		----	----	----	----	---	---	0
360 - 370		7.8	-5.2	----	----	---	---	4
370 - 380		4.3	-3.7	----	----	---	---	2
380 - 390		1.8	----	----	----	---	---	1
390 - 400		2.9	-3.9	----	----	---	---	2
^b 400 - 410		3.4	----	----	----	---	---	2
410 - 420		1.3	-4.3	----	----	---	---	2
420 - 440		----	----	----	----	---	---	0

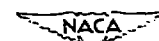
^aCloud entry.^bCloud exit.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts			
September 15, 1947 - Flight 38								
Airplane 356 - Traverse 3 Length of traverse 1000.8 sec								
440 - 450	20,000	3.3	-3.7	----	-10.3	---	178	3
450 - 460		----	----	----	----	---	---	0
460 - 470		1.3	-3.2	----	-10.3	---	83	2
470 - 480		----	-3.8	----	-9.9	---	274	1
480 - 520		----	----	----	----	---	---	0
520 - 530		3.8	-4.3	----	----	---	---	3
530 - 550		----	----	----	----	---	---	0
550 - 560		3.6	----	----	----	---	---	1
560 - 570		----	----	----	----	---	---	0
570 - 580		1.7	-5.6	----	----	---	---	3
580 - 590		1.7	----	----	----	---	---	1
590 - 600		----	-3.6	----	-9.7	---	34	1
600 - 610		2.6	-3.1	----	----	---	---	5
610 - 630		----	----	----	----	---	---	0
630 - 640		2.6	----	----	----	---	---	2
640 - 650		----	-4.1	----	----	---	---	1
650 - 660		----	-4.1	----	-9.8	---	51	1
660 - 670		9.2	-5.6	----	----	---	---	4
670 - 680		5.2	-5.2	----	----	---	---	2
680 - 690		6.2	-6.6	----	----	---	---	7
690 - 700		4.9	-6.9	----	----	---	---	5
700 - 710		3.4	-3.9	----	----	---	---	3
710 - 720		3.8	-3.8	----	-7.7	---	210	5
720 - 730		3.4	-3.3	----	----	---	---	2
730 - 1010		----	----	----	----	---	---	0
Airplane 356 - Traverse 4 Length of traverse 489.8 sec								
0 - 10	20,000	----	----	----	----	---	---	0
10 - 20		----	-2.3	----	----	---	---	1
20 - 30		----	----	----	----	---	---	0
30 - 40		----	-3.7	----	----	---	---	1
40 - 50		----	----	----	----	---	---	0
50 - 60		2.7	----	1.3	----	90	---	1
60 - 280		----	----	----	----	---	---	0

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e \max}$ (fps)	Maximum true gust velocity $U_{t \max}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 15, 1947 - Flight 38					
Airplane 356 - Traverse 4 Length of traverse 489.8 sec					
280 - 290	20,000	----	-3.2	----	1
290 - 300		2.8	-4.3	----	3
300 - 310		2.7	-2.2	----	2
310 - 470		----	----	----	0
470 - 490	19,500	----	----	----	0
Airplane 333 - Traverse 1 Length of traverse 614.1 sec					
0 - 10	15,000	7.1	-1.1	----	3
10 - 20	14,500	6.4	-4.2	----	3
20 - 30		6.9	-5.4	----	4
30 - 40		10.4	-4.2	12.3	3
40 - 50	15,000	----	-6.0	----	1
50 - 60		4.0	-6.9	----	3
60 - 70		8.4	-5.0	----	2
70 - 80		3.9	-4.1	----	4
80 - 90		5.7	-8.1	----	7
90 - 100		5.7	-7.6	11.2	3
100 - 110		3.2	----	----	1
110 - 120		----	----	----	0
120 - 130		6.7	----	15.1	2
130 - 140		7.1	-6.6	----	4
140 - 150		15.0	-12.3	----	5
150 - 160		8.1	-4.2	----	6
^a 160 - 170		8.0	-12.3	12.2	5
170 - 180		7.7	-10.2	----	5
180 - 190	15,500	6.3	-7.4	----	2
190 - 200		----	-11.1	-7.8	2
200 - 210	15,000	6.0	----	7.9	1
210 - 220		10.1	-4.5	----	2
220 - 230	15,500	----	-8.3	-7.0	1
230 - 240		6.2	-4.8	10.4	2

^aCloud entry.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 15, 1947 - Flight 38					
Airplane 333 - Traverse 1 Length of traverse 614.1 sec					
240 - 270	15,500	----	----	---	0
270 - 280		4.5	----	---	2
280 - 290		9.0	-3.1	---	4
290 - 300	16,000	6.7	-8.3	6.1	153
300 - 320		----	----	---	0
320 - 330		----	-7.6	---	1
330 - 340		----	-2.6	----	2
340 - 350		10.5	----	28.1	29
350 - 360		4.8	-3.4	----	2
360 - 370		5.2	-3.8	----	4
370 - 380	16,500	14.5	-6.9	13.0	109
380 - 390		7.8	-14.3	----	3
390 - 400		7.0	-10.3	9.9	79
400 - 410		11.8	-9.5	----	4
410 - 420		12.5	-4.6	----	2
420 - 430	17,000	----	-3.1	----	3
430 - 440	16,500	6.8	-6.8	11.7	-5.3
440 - 450		6.0	----	----	2
450 - 460		6.6	----	----	1
460 - 470		16.7	----	----	1
470 - 480	17,000	----	-2.2	----	1
480 - 490		5.8	-4.6	----	3
490 - 520		----	----	----	0
520 - 530		----	-3.2	----	1
^b 530 - 540		----	----	----	0
540 - 620		----	----	----	0
Airplane 333 - Traverse 2 Length of traverse 225.7 sec					
0 - 90	15,000	----	----	----	0
90 - 100		6.0	-4.5	----	3
100 - 110		2.1	----	----	1
^a 110 - 120		2.9	-7.8	----	3

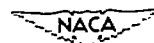
^aCloud entry.^bCloud exit.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e \max}$ (fps)	Maximum true gust velocity $U_{t \max}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 15, 1947 - Flight 38					
Airplane 333 - Traverse 2 Length of traverse 225.7 sec					
120 - 130	15,000	5.2	-----	-----	4
130 - 140		9.3	-6.5	-----	4
140 - 150		6.1	-7.3	6.4	5
150 - 160		-----	-6.3	-----	2
160 - 170		-----	-6.6	-----	2
170 - 180	15,500	10.3	-4.6	-----	5
180 - 190		-----	-7.4	-----	3
190 - 200		4.6	-8.3	-----	3
200 - 210		3.8	-4.0	-----	2
^b 210 - 220		-----	-----	-----	0
220 - 230		-----	-----	-----	0
Airplane 333 - Traverse 3 Length of traverse 1559.8 sec					
0 - 10	15,000	-----	-8.1	-----	1
10 - 20		-----	-----	-----	0
20 - 30		5.8	-4.7	-----	3
^a 30 - 40		9.2	-10.0	20.0	3
40 - 50		-----	-10.2	-----	4
50 - 60		6.8	-8.4	-----	5
60 - 90		-----	-----	-----	0
90 - 100		-----	-4.7	-----	2
100 - 110		-----	-----	-----	0
110 - 120		-----	-5.4	-----	1
^b 120 - 130		4.5	-3.1	11.0	2
130 - 140		-----	-----	-----	0
140 - 150		5.9	-4.6	12.9	4
150 - 160		-----	-7.9	-----	1
160 - 170		6.8	-----	10.9	1
170 - 180		6.7	-10.2	-----	3
180 - 190		3.7	-----	-----	1
190 - 290		-----	-----	-----	0
290 - 300		-----	-4.0	-----	2

^aCloud entry.
^bCloud exit.



TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 15, 1947 - Flight 38					
Airplane 333 - Traverse 3 Length of traverse 1559.8 sec					
300 - 320	15,000	----	----	----	0
320 - 330		7.6	-3.1	----	3
330 - 340		7.5	-6.2	----	5
340 - 350		10.3	-5.6	----	3
350 - 360		9.5	-4.1	----	8
360 - 370		15.2	-8.7	----	6
370 - 380		16.3	-13.1	----	4
380 - 390		4.4	----	----	1
390 - 400		----	-3.1	----	1
400 - 410		----	-7.0	----	1
410 - 420		6.6	-5.3	----	2
420 - 430		----	----	----	0
430 - 450	14,500	----	----	----	0
450 - 470	15,000	----	----	----	0
470 - 480		----	-3.2	----	2
480 - 490		----	----	----	0
490 - 500		5.4	----	----	2
500 - 510	14,500	----	----	----	0
510 - 520		5.6	----	----	1
520 - 530		----	-3.2	----	1
530 - 540		7.8	-5.6	----	3
540 - 550		5.7	-3.4	----	2
550 - 600		----	----	----	0
^a 600 - 610	15,000	5.9	----	----	1
^b 610 - 620	14,500	----	-13.3	----	1
620 - 670		----	----	----	0
670 - 680	15,000	6.7	-3.5	----	3
680 - 690	14,500	9.9	-5.8	----	4
690 - 700	15,000	5.7	----	----	1
700 - 770		----	----	----	0
770 - 780		3.1	----	5.5	93
780 - 1010		----	----	----	0
1010 - 1020		----	-5.1	----	2
1020 - 1030		9.7	----	----	1

^aCloud entry.^bCloud exit.

NACA

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e\max}$ (fps)	Maximum true gust velocity $U_{t\max}$ (fps)	Gust gradient distance (ft)	No. of gusts			
September 15, 1947 - Flight 38								
Airplane 333 - Traverse 3 Length of traverse 1559.8 sec								
1030 - 1100	15,000	----	-----	----	-----	---	---	0
1100 - 1110		6.3	-----	----	-----	---	---	1
1110 - 1120		----	-3.2	----	-----	---	---	2
1120 - 1130		8.5	-----	11.8	-----	152	---	3
1130 - 1140		3.0	-7.4	6.6	-11.0	128	121	5
1140 - 1150	15,500 15,000	8.0	-8.0	----	-----	---	---	2
1150 - 1160		4.6	-----	----	-----	---	---	1
1160 - 1170		3.8	-----	----	-----	---	---	1
1170 - 1180		5.5	-6.5	----	-14.1	---	145	2
1180 - 1190		9.9	-6.4	8.2	-----	912	---	5
1190 - 1200		10.4	-----	----	-----	---	---	2
1200 - 1210		----	-4.0	----	-----	---	---	1
1210 - 1220		7.9	-4.1	15.7	-----	49	---	2
1220 - 1560		----	-----	----	-----	---	---	0
Airplane 333 - Traverse 4 Length of traverse 401.2 sec								
0 - 50	15,000	----	-----	----	-----	---	---	0
50 - 60		----	-6.0	----	-----	---	---	1
60 - 120		----	-----	----	-----	---	---	0
120 - 130		3.1	-----	8.3	-----	100	---	1
130 - 140		----	-----	----	-----	---	---	0
140 - 150		----	-2.6	----	-6.0	---	101	1
150 - 160		----	-----	----	-----	---	---	0
160 - 170		3.1	-----	----	-----	---	---	1
170 - 190		----	-----	----	-----	---	---	0
190 - 200		5.6	-7.3	----	-----	---	---	2
200 - 210		3.9	-----	----	-----	---	---	1
210 - 220		----	-----	----	-----	---	---	0
220 - 230		----	-3.4	----	-----	---	---	1
230 - 250		----	-----	----	-----	---	---	0
250 - 260		----	-3.2	----	-----	---	---	1

^a Cloud entry.

NACA

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)		Maximum true gust velocity $U_{t_{max}}$ (fps)		Gust gradient distance (ft)	No. of gusts	
September 15, 1947 - Flight 38								
Airplane 333 - Traverse 4 Length of traverse 401.2 sec								
260 - 270	15,000	5.3	-----	-----	-----	---	1	
270 - 280		6.2	-4.6	-----	-----	---	2	
280 - 290		-----	-2.5	-----	-----	---	1	
290 - 300		5.8	-----	-----	-----	---	1	
300 - 310		8.3	-----	-----	-----	---	2	
310 - 320		4.6	-8.0	-----	-----	---	4	
320 - 330		6.2	-----	-----	-----	---	1	
330 - 370		-----	-----	-----	-----	---	0	
370 - 380		-----	-----	-----	-----	---	0	
380 - 410		-----	-----	-----	-----	---	0	
Airplane 348 - Traverse 1 Length of traverse 552.3 sec								
^a 0 - 10	9,500	4.8	-7.7	-----	-7.7	---	156	6
10 - 20		8.7	-5.1	-----	-6.8	---	193	5
20 - 30		-----	-----	-----	-----	---	---	0
30 - 40		3.8	-5.4	-----	-10.0	---	105	3
40 - 50		5.1	-5.4	-----	-----	---	---	6
50 - 60		8.7	-11.2	-----	-22.9	---	188	4
60 - 70		12.8	-4.5	-----	-----	---	---	10
70 - 80		5.1	-4.5	-----	-----	---	---	12
80 - 90		4.5	-5.4	-----	-----	---	---	4
90 - 100		5.1	-3.2	-----	-----	---	---	5
100 - 110		2.9	-2.2	-----	-----	---	---	2
110 - 120		6.4	-4.8	-----	-----	---	---	10
120 - 130		4.8	-4.2	-----	-----	---	---	9
130 - 140		4.5	-4.8	-----	-----	---	---	3
140 - 150		4.5	-6.4	-----	-----	---	---	5
150 - 160		4.5	-6.1	-----	-----	---	---	6
160 - 170		4.5	-4.5	5.3	-7.9	95	65	6
170 - 180		3.5	-1.6	-----	-----	---	---	3
180 - 190		3.8	-1.6	-----	-----	---	---	7

^aCloud entry.^bCloud exit.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)		Maximum true gust velocity $U_{t_{max}}$ (fps)		Gust gradient distance (ft)		No. of gusts
September 15, 1947 - Flight 38.								
Airplane 348 - Traverse 1 Length of traverse 552.3 sec								
190 - 200	9,500	6.7	-4.5	----	----	---	---	3
200 - 210		3.5	-2.2	----	----	---	---	4
210 - 220		2.9	-5.4	----	----	---	---	6
220 - 230		5.1	-9.9	----	----	---	---	7
230 - 240		5.4	-9.9	----	----	---	---	5
240 - 250		1.9	-1.9	----	----	---	---	4
250 - 260	10,000	2.6	-1.9	----	----	---	---	6
260 - 270		4.8	-7.0	----	----	---	---	6
270 - 280	9,500	6.4	-5.4	----	----	---	---	5
280 - 290		11.5	----	----	----	---	---	2
290 - 300	10,000	4.5	-4.5	----	----	---	---	4
300 - 310		----	-3.2	----	-7.0	---	117	1
310 - 320		4.5	-4.2	----	----	---	---	3
320 - 330		2.9	-3.8	----	----	---	---	4
330 - 340		3.5	-6.4	----	----	---	---	5
340 - 350	9,500	2.2	-4.2	----	----	---	---	2
350 - 360		3.5	-4.2	----	----	---	---	7
360 - 370		5.1	-5.1	----	----	---	---	5
370 - 380		5.7	-7.1	----	-10.0	---	107	4
380 - 390		2.6	-3.8	----	----	---	---	5
390 - 400	10,000	22.1	-7.0	----	----	---	---	8
400 - 410		8.0	-13.1	----	----	---	---	7
410 - 420		5.1	-7.1	----	----	---	---	7
420 - 430		10.6	-6.1	----	----	---	---	8
430 - 440		9.3	-10.9	16.9	-16.1	225	164	6
440 - 450		7.1	-5.8	----	----	---	---	5
450 - 460		8.0	-9.6	----	----	---	---	3
460 - 470		8.3	-8.0	----	----	---	---	6
470 - 480		8.0	-5.1	----	-14.1	---	162	7
480 - 490		6.7	-3.8	----	----	---	---	6
490 - 500		6.4	-6.4	9.0	----	240	---	5
500 - 510		8.0	-4.2	9.2	----	79	---	3
510 - 520		3.2	-9.0	----	-9.9	---	179	4
520 - 530		----	----	----	----	---	---	0
^b 530 - 540		----	----	----	----	---	---	0
540 - 560		----	----	----	----	---	---	0

^bCloud exit.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 15, 1947 - Flight 38					
Airplane 348 - Traverse 2 Length of traverse 215.0 sec					
0 - 10	10,000	3.5	-4.1	---	2
10 - 20		2.5	----	----	1
20 - 50		----	----	----	0
^a 50 - 60	9,500	3.5	----	4.1	1
60 - 70		3.2	----	----	3
70 - 80		2.8	-2.5	----	2
80 - 90		3.8	-3.8	----	4
90 - 100		----	----	----	0
100 - 110	10,000	2.5	----	----	1
110 - 120		----	-3.2	----	2
120 - 130		3.8	-4.1	----	4
130 - 140	9,500	----	----	----	0
140 - 150		4.7	-5.7	----	3
150 - 160		10.7	-3.2	----	8
160 - 170		9.1	-4.1	----	6
170 - 180		5.4	-11.0	----	8
180 - 190		----	-4.4	----	2
190 - 200		9.8	-5.4	----	3
^b 200 - 210		----	-9.1	----	4
210 - 220		----	----	----	0
Airplane 348 - Traverse 3 Length of traverse 1012.0 sec					
^a 0 - 10	9,500	3.1	----	----	1
10 - 20		----	-4.1	----	2
20 - 30		3.8	----	----	3
30 - 40		4.7	----	----	1
40 - 50		3.1	----	----	2
50 - 60	10,000	----	-3.1	----	1
60 - 70		2.5	----	11.8	1
70 - 80		----	-3.1	-6.7	4
80 - 90		----	-3.1	----	1

^aCloud entry.^bCloud exit.

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)		Maximum true gust velocity $U_{t_{max}}$ (fps)		Gust gradient distance (ft)		No. of gusts
September 15, 1947 - Flight 38								
Airplane 348 - Traverse 3 Length of traverse 1012.0 sec								
90 - 100	10,000	6.9	-4.4	----	-----	---	---	3
100 - 110		8.5	-5.7	----	-----	---	---	7
110 - 120		----	-5.3	----	-----	---	---	2
120 - 130		4.7	-5.0	----	-----	---	---	2
130 - 140		3.4	----	----	-----	---	---	3
140 - 150		----	----	----	-----	---	---	0
150 - 160		2.8	-4.1	----	-----	---	---	3
160 - 170		4.4	-3.8	----	-----	---	---	4
170 - 180		6.9	----	----	-----	---	---	4
180 - 190		3.8	-3.8	----	-----	---	---	4
190 - 200		4.1	-2.2	10.2	-----	81	---	4
200 - 210		----	-6.3	----	-12.2	---	145	3
210 - 220	----	----	----	-----	---	---	0	
220 - 230	2.5	-2.2	----	-----	---	---	3	
230 - 240	----	----	----	-----	---	---	0	
240 - 250	1.6	-2.2	----	-----	---	---	2	
250 - 270	----	----	----	-----	---	---	0	
270 - 280	2.5	----	----	-----	---	---	2	
280 - 290	----	----	----	-----	---	---	0	
290 - 300	4.4	-3.1	4.8	-----	82	---	2	
300 - 320	9,500	----	----	----	-----	---	---	0
320 - 330		2.8	----	----	-----	---	---	1
330 - 350		----	----	----	-----	---	---	0
350 - 360	10,000	----	-2.5	----	-----	---	---	1
360 - 370		5.0	----	----	-----	---	---	1
370 - 380		----	-4.1	----	-----	---	---	1
380 - 390		----	-9.7	----	-----	---	---	1
390 - 400	----	-2.2	----	-----	---	---	1	
400 - 410	9,500	----	----	----	-----	---	---	0
410 - 440		----	----	----	-----	---	---	0
440 - 450		4.7	-6.6	----	-----	---	---	8
450 - 460		5.3	----	----	-----	---	---	1
460 - 470	10,000	7.9	-2.2	18.6	-----	366	---	4
470 - 480		5.3	-5.7	----	-----	---	---	4
480 - 490		1.9	-7.5	----	-----	---	---	3
490 - 520		----	----	----	-----	---	---	0

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e \max}$ (fps)	Maximum true gust velocity $U_{t \max}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 15, 1947 - Flight 38					
Airplane 348 - Traverse 3 Length of traverse 1012.0 sec					
520 - 530	9,500	2.5	----	----	1
530 - 540		3.8	-3.1	----	3
540 - 550		5.3	-2.2	----	2
550 - 560		----	----	----	0
560 - 570		----	-9.1	----	1
570 - 580		----	----	----	0
580 - 590		3.8	----	----	3
590 - 600		4.1	-4.1	-6.6	2
600 - 610		----	-1.3	----	1
610 - 620		----	-4.7	-3.6	1
620 - 640		----	----	----	0
640 - 650		4.4	----	5.5	1
650 - 660		4.1	----	----	1
660 - 670		----	-2.2	----	1
670 - 690		----	----	----	0
690 - 700		6.9	-7.5	----	5
700 - 710		2.8	-3.8	----	2
710 - 720		2.5	----	4.8	1
720 - 730		4.4	-3.8	5.5	3
730 - 740		3.8	-3.8	----	2
740 - 750		----	-4.4	----	2
750 - 760		4.4	-3.1	----	3
760 - 770	10,000	----	-3.8	-7.6	3
770 - 780		2.2	-2.2	----	3
780 - 790		----	----	----	0
790 - 800		2.8	-2.8	----	3
800 - 810	9,500	3.8	-3.1	----	4
810 - 820		4.4	-4.4	----	5
820 - 850		----	----	----	0
850 - 860		2.8	-2.2	----	3
860 - 870		5.6	-3.8	----	2
870 - 890		----	----	----	0
890 - 900		----	-2.2	----	1
900 - 910		2.8	-3.1	----	2
910 - 970		----	----	----	0
970 - 980		----	-2.5	----	1

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Continued

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts	
September 15, 1947 - Flight 38						
Airplane 348 - Traverse 3 Length of traverse 1012.0 sec						
980 - 990 990 - 1020	9,500	2.2 ----	----- -----	----- -----	--- ---	1 0
Airplane 348 - Traverse 4 Length of traverse 351.7 sec						
0 - 10 10 - 20 20 - 30 ^a 30 - 40 40 - 50 50 - 60 60 - 70 70 - 80 80 - 90 90 - 100 100 - 130 130 - 140 140 - 150 150 - 170 170 - 180 180 - 190 190 - 200 200 - 210 210 - 220 220 - 230 230 - 240 240 - 250 250 - 260 260 - 270 270 - 280 280 - 290 290 - 300 300 - 310	9,500 10,000 9,500 10,000 9,500 10,000	4.3 ----- 2.5 2.8 5.6 4.7 ----- 3.1 4.7 4.0 ----- 5.3 ----- ----- 2.5 ----- 2.5 ----- ----- 3.4 8.1 3.7 4.0 4.0 4.3 ----- 2.5 ----- -3.1 -6.2 ----- -3.7 ----- 4.0 ----- 4.5 ----- -3.1	-2.5 ----- ----- -4.3 -2.2 ----- -2.2 -4.0 -1.9 -4.3 ----- ----- ----- -4.3 ----- ----- ----- -2.5 ----- ----- -3.1 -6.2 ----- -3.7 ----- ----- ----- ----- ----- ----- -4.7 ----- ----- -6.0	----- 		

^aCloud entry.

NACA

TABLE I.- SUMMARY OF GUST MEASUREMENTS - Concluded

Time interval (sec)	Pressure altitude (ft)	Maximum effective gust velocity $U_{e_{max}}$ (fps)	Maximum true gust velocity $U_{t_{max}}$ (fps)	Gust gradient distance (ft)	No. of gusts
September 15, 1947 - Flight 38					
Airplane 348 - Traverse 4 Length of traverse 351.7 sec					
310 - 330	10,000	----	----	---	0
330 - 350	9,500	----	----	---	0
^b 350 - 360		----	----	---	0

^bCloud exit.

NACA

TABLE II.- SUMMARY OF DRAFT-VELOCITY MEASUREMENTS FROM FLIGHTS
OF P-61C AIRPLANES WITHIN THUNDERSTORMS

Date	Flight no.	Air-plane no.	Assigned altitude (ft)	Traverse no.	Draft location from start of traverse (sec)		Draft extent (ft)	Average draft velocity (fps)
					Start	End		
9-10-47	36	348	25,000	1	139.6	157.3	6,220	-21.5
				2	163.7	197.2	11,832	34.6
					210.8	227.8	6,220	61.5
					813.1	879.5	23,132	-7.8
					948.8	964.6	5,694	24.1
					1452.9	1467.6	5,380	61.6
					1493.0	1510.1	5,297	50.3
				3	288.9	301.2	4,218	-27.6
				4	474.3	500.0	9,760	47.9
		356	20,000	1	76.0	96.0	6,331	14.9
				1	764.6	841.6	27,086	6.8
				2	115.4	137.2	7,776	52.7
				2	157.0	200.0	14,758	16.7
				3	64.5	85.5	7,248	23.7
				3	124.8	163.1	12,987	-20.9
		354	15,000	1	62.9	83.0	6,656	22.7
				1	907.0	923.3	5,053	38.2
					941.0	969.0	10,126	-44.1
					995.0	1034.0	13,498	-17.6
					1387.0	1399.0	3,698	25.0
					1513.5	1526.5	3,917	26.4
					1631.8	1650.0	5,663	40.8
					2078.5	2097.6	6,374	28.4
					2189.0	2199.0	3,202	-30.7
					2274.0	2296.4	7,362	31.9
				2	40.9	62.0	6,129	-5.7
					74.4	115.0	11,441	10.9
					165.0	184.8	6,094	32.6
		333	10,000	1	138.8	146.0	2,039	-29.4
				1	1154.0	1181.2	7,670	19.7
					2357.5	2378.0	5,873	17.7

TABLE II.- SUMMARY OF DRAFT-VELOCITY MEASUREMENTS - Continued

Date	Flight no.	Air-plane no.	Assigned altitude (ft)	Traverse no.	Draft location from start of traverse (sec)		Draft extent (ft)	Average draft velocity (fps)
					Start	End		
9-10-47	37	354	25,000	1	712.8	724.5	4,220	27.4
				2	372.6	380.2	2,537	34.2
					383.6	394.5	3,602	11.0
					1089.0	1106.5	5,766	9.1
					1430.0	1436.9	2,448	-37.7
					1659.3	1723.0	23,130	-17.3
		348	20,000	1	180.0	217.5	12,713	-8.9
					657.4	681.6	8,690	26.9
				2	171.0	180.3	3,337	26.8
					217.0	234.5	6,244	-14.2
					883.0	898.7	5,736	-11.7
					929.5	945.0	5,759	18.3
					1321.0	1356.0	12,199	11.9
		333	15,000	^a 1				
				2	403.0	438.2	11,427	-7.5
					435.0	555.0	6,432	-6.4
		360	10,000	3	186.5	206.6	6,480	12.8
				^b 1				
				^b 2				
9-15-47	38	354	25,000	1	156.5	176.4	6,711	13.1
					189.9	230.0	13,999	23.9
					335.0	351.5	5,851	12.1
				^a 2				
				^a 3				
				^a 4				
				^a 5				

^aNo draft velocities indicated by records.^bFailure in operation of airspeed-altitude recorder prevented computation of draft velocities.

TABLE II.- SUMMARY OF DRAFT-VELOCITY MEASUREMENTS - Concluded

Date	Flight no.	Air-plane no.	Assigned altitude (ft)	Traverse no.	Draft location from start of traverse (sec)		Draft extent (ft)	Average draft velocity (fps)
					Start	End		
9-15-47	38	356	20,000	1	266.5	284.0	5,785	-15.2
					320.1	349.0	9,743	-5.7
				2	186.8	227.9	14,123	5.7
					241.5	254.8	4,455	-8.5
				3	557.0	579.2	7,484	6.7
				a ₄				
		333	15,000	1	172.6	189.9	5,050	28.8
					290.4	326.6	10,935	19.3
					371.5	391.0	6,077	27.8
				2	100.0	137.8	11,289	6.7
					158.0	185.0	8,356	18.5
				3	179.0	190.1	3,372	-11.5
					290.0	312.2	6,574	-12.9
					486.5	515.0	8,079	-8.8
					1173.0	1194.5	6,280	-12.7
		348	10,000	4	151.0	159.5	2,309	13.5
				1	58.1	75.0	4,880	-5.9
					393.5	406.5	3,923	32.7
				2	144.0	164.2	6,108	-13.0
				3	105.2	120.0	4,427	8.4
					356.0	386.6	9,011	9.0
					503.0	549.0	14,051	-6.0
					803.8	819.0	4,593	-5.8
				4	38.5	76.9	10,982	6.2
					201.0	223.0	6,663	6.8

^aNo draft velocities indicated by records.



INDEX

<u>Subject</u>	<u>Number</u>
Gusts - Structure	6.1.2.1
Gusts - Frequency	6.1.2.2
Gusts - Turbulence	6.1.2.3

ABSTRACT

The gust and draft velocities from records of NACA instruments installed in P-61C airplanes participating in thunderstorm flights at Clinton County Army Air Field, Ohio, from September 10, 1947 to September 15, 1947, are presented.